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## (54) PLIED PAPER FOR GLASS

## (57)Abstract:

PURPOSE: To provide a plied paper for glass designed to avoid developing paper texture patterns of its trace or scorch phenomena on esp. thin plate glass in their conveyance in a flat-stacked state and to effectively prevent their getting out of place by providing said paper with notched perforations in an appropriately dispersed fashion throughout its surface.

CONSTITUTION: The objective plied paper for glass with notched perforations dispersed throughout its surface. Each of the perforations is of circle or St. Andrew's cross shape, being folded back on one side at its periphery; its size being 0.7-5mm in diameter. These perforations are 20-100mm in pitch and 200-400/m<sup>2</sup> in dispersion density.

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## CLAIMS

[Claim(s)]

[Claim 1] Interleaving paper for glass characterized by making a slitting hole distribute all over interleaving paper.

[Claim 2] Interleaving paper for glass according to claim 1 with which said slitting hole is characterized by being a letter of O mark, or a letter of x mark.

[Claim 3] Interleaving paper for glass according to claim 1 to 2 with which said slitting hole is characterized by making with the shape of a clinch on one side by periphery of this hole.

[Claim 4] said slitting hole -- magnitude of 0.7-5mm of diameters -- it is -- the pitch -- 20-100mm it is -- interleaving paper for glass according to claim 1 to 3 characterized by things.

[Claim 5] Distribution of said slitting hole is 200-400. Interleaving paper for glass according to claim 1 to 4 characterized by being an individual / m2.

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## DETAILED DESCRIPTION

### [Detailed Description of the Invention]

[0001]

[Industrial Application] This invention inserts interleaving paper between sheet glass, especially sheet glass, and in case it conveys the so-called \*\*\*\*\* glass stacked especially horizontally, it relates to the interleaving paper which can prevent board gap.

[0002]

[Description of the Prior Art] In case conveyance, transportation, and storage are carried out in the state of the above mentioned \*\*\*\*\* or \*\*\*\*\* etc. in the sheet glass industry from the former, between the sheet glass which adjoins each other, interleaving paper is put, it is used, and the proposal which the \*\*\*\* pattern imprinted by glass, the YAKE phenomenon of glass, or interleaving paper is turned over, and prevents \*\* gap omission etc. is variously performed about this interleaving paper.

[0003] For example, the front reverse side makes JP,2-40798,B penetrate a wire rod to the upper edge part of the interleaving paper which the thing of making a \*\*\*\* pattern and a YAKE phenomenon hard to produce is indicated, and overflowed the sheet glass upper limit side into JP,2-112635,U with the interleaving paper constituted so that the Beck smoothness may serve as a split face for 20 or less seconds, this wire rod is lengthened to the backward upper part, and the interleaving paper supporting structure from which it is going to make it for interleaving paper to shift and not fall is indicated.

[0004]

[Problem(s) to be Solved by the Invention] As mentioned above, even if a \*\*\*\* pattern, a YAKE phenomenon, or interleaving paper shifted to the interleaving paper for glass given in said JP,2-40798,B, or JP,2-112635,U in the interleaving paper supporting structure of a publication and omission has been prevented, it was what is in a \*\*\*\*\* condition especially, and is hard to be called what can prevent the gap phenomenon of sheet glass sufficiently certainly in case interleaving paper is put, especially dozens of sheet glass is loaded and conveyance etc. is carried out.

[0005]

[Means for Solving the Problem] It is making this invention in view of a trouble which the former's requires, distributing suitably and arranging a slitting hole all over interleaving paper. Air bit between two \*\*\*\*\* keeps company with front reverse side both sides of interleaving paper suitably through this slitting hole. Winning and exclusion can be performed, slide resistance produced with this slitting hole can be harnessed, it becomes the thing it was made to discover neither the remains of interleaving paper, nor YAKE moreover, and loading of various sheet glass goods -- board gap can be prevented also in sheet glass -- is provided with useful interleaving paper for glass.

[0006] That is, this invention is interleaving paper for glass characterized by making a slitting hole distribute all over interleaving paper. And interleaving paper for glass with which said slitting hole is characterized by being a letter of O mark, or a letter of x mark and which was mentioned above. Moreover, interleaving paper for glass with which said slitting hole is characterized by making with the shape of a clinch on one side by periphery of this hole and which was mentioned above.

[0007] furthermore, said slitting hole -- magnitude of 0.7-5mm of diameters -- it is -- the pitch -- 20-100mm it is -- interleaving paper for glass which is characterized by things and which was mentioned above. Distribution of said slitting hole is 200-400 further again. Interleaving paper for glass which is characterized by being an individual / m2 and which was mentioned above is offered, respectively.

[0008] As described above, having carried out to having made the whole surface distribute a slitting hole here

While being able to harness slide resistance which bit air can go back and forth and eliminate to front reverse side both sides of interleaving paper suitably through this slitting hole, and is produced with this slitting hole in case it loads by \*\*\*\*\* etc. as mentioned above It is because it found out that it was able to make it to discover neither the remains of interleaving paper nor YAKE. further -- distribution of this slitting hole -- the shape of a grid -- although any, such as the shape of alternate or random, are sufficient, the shape of activity top random is rather desirable.

[0009] Moreover, said slitting hole decided to be a letter of O mark, or a letter of x mark because processing of this slitting was rather easy, and easy and effective for prevention of a gap phenomenon of sheet glass. a letter of O mark of what only becomes x-like is still more natural when O becomes a letter of x mark with a slitting hole from the first, for example, including an ellipse and various polygons -- it is not only a thing also containing a thing used as a rectangular-head hole, but a letter of O mark and a letter of x mark are intermingled -- also making -- it is good and a thing of a letter of \*\* mark may also be accepted further again.

[0010] Said slitting hole furthermore, having made with the shape of a clinch on one side by periphery of this hole the time of processing a slitting hole -- this hole -- a clinch-like piece produced on one side of a periphery -- When in other words a weld flash-like piece puts this interleaving paper between sheet glass, while it closes partially or things to do for various change, such as a condition [ that said hole serves as a clinch ], become effective to the aeration or board gap resistance It contributes also to the remains of interleaving paper, or YAKE prevention, and becomes convenient. Moreover, a direction made into the shape of a clinch at said one side may give which on a rear face of a table, or a same side or regularity with a slitting hole currently distributed, and it is possible for it a table, the reverse side, and to make it random.

[0011] further -- again -- said slitting hole -- magnitude of 0.7-5mm of diameters -- it is -- the pitch -- 20-100mm it is -- having considered as things -- 0.7mm Under with a path, if the number of holes is not increased extremely, an effect decreases in said aeration carried out, especially momentary aeration, or board gap and a diameter of 5mm is exceeded, the number of holes will be reduced extremely and an effect will decrease similarly. 20-100mm which is a pitch especially desirable from handling of interleaving paper It is because it is that it may be stopped entering. Magnitude of a desirable slitting aperture is about 1-3mm, and a desirable pitch is about 30-70mm more preferably about 25-80mm.

[0012] Distribution of said slitting hole is 200-400 further again. While that we decided to be an individual / m<sup>2</sup> stops ceasing to fill the various conditions with the number per [ which separated from this range ] unit area m<sup>2</sup>, it is because it becomes impossible that it is hard to attain the various effects. Good better \*\* 250-350 It is an individual / about m<sup>2</sup>.

[0013] Moreover, as said sheet glass, they are an inorganic transparence glass plate or the thing of quality of organic. Sheet glass, for example, board thickness, is 0.5-2.5mm especially. It is not what is a degree and is limited to colorlessness or coloring and its class or coat processing, especially a configuration, etc. It cannot still be overemphasized as well as bending sheet glass that it can be used with various tempered glass, on-the-strength rise glass, a plate, a veneer, etc., and can be used also as multiple glass or laminated glass.

[0014]

[Function] If the interleaving paper of this invention is used as mentioned above, it will set to \*\*\*\*\* especially. The air bit between two loaded \*\*\*\*\* keeps company with front reverse side both sides of interleaving paper suitably through this slitting hole. Winning and exclusion can be performed and the contact force of sheet glass and interleaving paper increases, and it combines with the slide resistance produced with this slitting hole, and can harness. and it becomes the thing which can be prevented from discovering the remains of interleaving paper, and YAKE, and also in sheet glass, board gap can be prevented, and it can cancel, for example, the trouble in a production process is lost under migration and after that, and working efficiency is markedly alike and may improve.

[0015]

[Example] Hereafter, an example explains this invention concretely. However, this invention is not limited to the starting example.

[0016] Example 1 cut magnitude abbreviation 900mm x600mm and clearance float plate glass with a thickness of about 1mm By the interleaving paper feeder to plates, such as \*\*\*\* sheet glass indicated to the feeder of well-known interleaving paper, for example, JP,52-121271,A [ sheets /, for example, when loading about 20 sheets and transporting a conveyance conveyor top to degree production process horizontally, / several ] while supplying interleaving paper -- the shape of \*\*\*\*\* -- many -- Said \*\*\*\*\* sheet glass back end section is pressed and transported with high-pressure air (for example, 3kg/cm<sup>2</sup> degree) so that upside sheet glass may

not shift with inertial force.

[0017] The interleaving paper which arranged the slitting hole with a clinch of 2mm of \*\*\*\* in the ram dam at about 50mm pitch was used for this \*\*\*\*\* mentioned above. Consequently, if it is conventional interleaving paper, it will set even from the topmost sheet glass, for example to the sheet glass under 3-6 sheets, and it is about 50-200mm. The phenomenon of board gap could prevent only topmost part sheet glass by setting a degree to about 0-5mm, and what had produced degree board gap has been solved. When the environmental-test machine furthermore performed the accelerated test for the remains trial of interleaving paper, the result equivalent to conventional interleaving paper was obtained.

[0018] The interleaving paper with which only interleaving paper arranged the slitting hole with a clinch of \*\*\*\* 0.8 mm in the ram dam at about 50mm pitch was used like example 2 example 1.

[0019] Consequently, the same result as an example 1 was obtained.

[0020]

[Effect of the Invention] As mentioned above, in case according to this invention a \*\*\*\*\* condition is loaded especially and conveyance, transportation, or storage is carried out, while preventing the gap phenomenon of sheet glass, also being able to cancel the trouble in each production process and improving working efficiency, without it seeming that a \*\*\*\* pattern, a YAKE phenomenon, etc. of the remains of interleaving paper are discovered to sheet glass, the automation stabilized with high safety and the useful interleaving paper for glass which can be made are offered.

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(54)【発明の名称】 ガラス用合紙

## (57)【要約】

【構成】 台紙の全面に切り込み孔を分散せしめたことを特徴とするガラス用台紙であって、切り込み孔が○印状あるいは×印状であり、切り込み孔の周辺部で片面に折り返し状となし、切り込み孔が径0.7～5mmの大きさ、かつそのピッチは20～100mmであり、さらに切り込み孔の分散が、200～400個/m<sup>2</sup>であることを特徴とするガラス用台紙。

【効果】 ことに平積み状態に積載し、搬送、輸送あるいは保管等をする際に、板ガラスに台紙跡の紙肌模様やヤケ現象等を発現するようなこともなく、板ガラスのズレ現象を防止し、各工程でのトラブルを解消でき、作業効率を向上するとともに、高安全性で高安定性の自動化となる。

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## 【特許請求の範囲】

【請求項1】 合紙の全面に切り込み孔を分散せしめたことを特徴とするガラス用合紙。

【請求項2】 前記切り込み孔が、○印状あるいは×印状であることを特徴とする請求項1記載のガラス用合紙。

【請求項3】 前記切り込み孔が、該孔の周辺部で、片面に折り返し状となしたことを特徴とする請求項1乃至2記載のガラス用合紙。

【請求項4】 前記切り込み孔が、径0.7～5mmの大きさであって、そのピッチは20～100mmであることを特徴とする請求項1乃至3記載のガラス用合紙。

【請求項5】 前記切り込み孔の分散が、200～400個/㎡であることを特徴とする請求項1乃至4記載のガラス用合紙。

## 【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、板ガラス、特に薄板ガラスの間に合紙を挿入し、ことに水平に積む所謂平積みガラスを搬送する際において、板ズレを防止し得る合紙 20 に関する。

【0002】

【従来の技術】従来から板ガラス業界では、前記した平積みあるいは立積み状態等で搬送、輸送、保管をする際、相隣接する板ガラス間に合紙を挟み込み使用されており、該合紙については、ガラスに転写される紙肌模様やガラスのヤケ現象、あるいは合紙のめくれやズレ落ち等を防止する提案が種々行われている。

【0003】例えば、特公平2-40798号公報には、表裏ともにベック平滑度が20秒以下の粗面となるように構成する合紙によって、紙肌模様やヤケ現象を生じにくく 30 するというものが開示されており、また、実開平2-112635号公報には、板ガラス上端面から食み出た合紙の上辺部に線材を貫通させてこの線材を後上方へ引くようにし、合紙がズレ落ちることがないようにしようとする合紙保持装置が開示されている。

【0004】

【発明が解決しようとする問題点】前述したように、前記特公平2-40798号公報に記載のガラス用合紙、あるいは実開平2-112635号公報に記載の合紙保持装置等では、紙肌模様やヤケ現象、あるいは合紙がズレ落ちは防 40 止できたとしても、ことに平積み状態で、特に薄板ガラスを合紙を挟み込み数十枚積載して搬送等をする際、板ガラスのズレ現象を充分確実に防止できるものとは言えないものであった。

【0005】

【問題点を解決するための手段】本発明は、従来のかかる問題点に鑑みてなしたものであって、合紙の全面に切り込み孔を適宜分散して配設することで、隣合う2枚の間に噛み込んだ空気が該切り込み孔を通して適宜合紙の 50

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表裏両面に行き来し、抱き込みや排除ができ、該切り込み孔で生じるスベリ抵抗を活かせ、しかも合紙跡やヤケを発現することがないようにしたものとなり、薄板ガラスにおいても板ズレが防止でき得る等、各種板ガラス物品の積載に有用なガラス用合紙を提供するものである。

【0006】すなわち、本発明は、合紙の全面に切り込み孔を分散せしめたことを特徴とするガラス用合紙。ならびに、前記切り込み孔が、○印状あるいは×印状であることを特徴とする上述したガラス用合紙。また、前記切り込み孔が、該孔の周辺部で、片面に折り返し状となしたことを特徴とする上述したガラス用合紙。

【0007】さらに、前記切り込み孔が、径0.7～5mmの大きさであって、そのピッチは20～100mmであることを特徴とする上述したガラス用合紙。さらにまた、前記切り込み孔の分散が、200～400個/㎡であることを特徴とする上述したガラス用合紙をそれぞれ提供するものである。

【0008】ここで、前記したように、全面に切り込み孔を分散せしめたこととしたのは、上述したように、平積み等で積載する際、噛み込んだ空気が該切り込み孔を通して適宜合紙の表裏両面に行き来して排除でき、該切り込み孔で生じるスベリ抵抗を活かすことができるとともに、合紙跡やヤケを発現することがないようにすることが可能であることを見出したからである。さらに該切り込み孔の分散については、格子状、千鳥状あるいはランダム状等のいずれでもよいが、どちらかと言えば作業上ランダム状が好ましいものである。

【0009】また、前記切り込み孔が、○印状あるいは×印状であることとしたのは、該切り込みの加工がどちらかと言えば簡単で容易であり、かつ板ガラスのズレ現象の防止に効果的であるからである。さらに○印状とは、○はもとより例えば楕円、各種多角形を含み、また×印状とは、切り込み孔となった際、単に×状となるものはもちろん四角孔となるものも含むものであるばかりでなく、また○印状と×印状を混在させもよく、さらにまた△印状のものでも通用し得るものである。

【0010】さらに、前記切り込み孔が、該孔の周辺部で、片面に折り返し状となしたのは、切り込み孔を加工した際、該孔周辺部の片面に生ずる折り返し状片、言い換えればバリ状片が、該合紙を板ガラスの間に挟み込んだ際、前記孔が部分的に閉じたり、あるいは折り返しとなったままの状態等各種変化することが、前記した通気あるいは板ズレ抵抗に対し効果的となるとともに、合紙跡やヤケ防止にも寄与し、好都合となるものである。また、前記片面に折り返し状とする方向は、分散している切り込み孔によって、表裏面のどちらか同一側のみ、あるいは規則性を持たせて表と裏、ランダムにすることもよいものである。

【0011】さらにまた、前記切り込み孔が、径0.7～5mmの大きさであって、そのピッチは20～100mmである

こととしたのは、0.7mm 径未満では極端に孔の数を増やさなければ前記した通気、ことに瞬時の通気、あるいは板ズレに効果が少なくなり、5mm径を超えると極端に孔の数を減らすこととなり、同様に効果が減じる。ことに台紙の取扱いから好ましいピッチである20~100mmに入らなくなることとなることがある等であるからである。好ましい切り込み孔径の大きさは1~3mm程度であり、また好ましいピッチは25~80mm程度、より好ましくは30~70mm程度である。

【0012】さらにまた、前記切り込み孔の分散が、20 10 0~400 個/m<sup>2</sup>であることとしたのは、該範囲を外れた単位面積m<sup>2</sup>当たりの個数では、前記した各種条件を満たさなくなるようになるとともに、前記した各種効果も達成でき難くなるからである。好ましくは250~350 個/m<sup>2</sup>程度である。

【0013】また、前記板ガラスとしては、無機質の透明ガラス板または有機質のものであって、ことに薄板ガラス、例えば板厚が0.5~2.5mm 程度のものであり、無色または着色、ならびにその種類あるいは被膜処理、形状等に特に限定されるものではなく、さらに曲げ板ガラス 20 板や単板等で使用でき、複層ガラスあるいは合せガラスとしても使用できることは言うまでもない。

【0014】

【作用】前述したとおり、本発明の台紙を用いると、ことに平積みにおいて、積載した隣合う2枚の間に噛み込んだ空気が該切り込み孔を通して適宜台紙の表裏両面に行き来し、抱き込みや排除ができて、板ガラスと台紙の接触力が高まり、該切り込み孔で生じるスベリ抵抗と併せて活かせ、しかも台紙跡やヤケを発現することがない 30 ようにできるものとなり、薄板ガラスにおいても板ズレが防止でき得、解消できることとなり、例えば移送中やその後工程でのトラブルがなくなり、作業効率が格段に向上し得たものである。

【0015】

【実施例】以下、実施例により本発明を具体的に説明する。ただし本発明は係る実施例に限定されるものではない。

#### 【0016】実施例1

切断された大きさ約900mm x 600mm、厚さ約1mmのクリア・フロート板ガラスを、公知の台紙の供給装置、例えば特開昭52-121271号公報に開示する如き板ガラス等の板状体への台紙供給装置によって、台紙を供給しつつ、平積み状に多数枚、例えば約20枚程度積載し、次工程に搬送コンベヤ上を水平に移送する際において、慣性力により上部の板ガラスがズレないように、前記平積み板ガラス後端部を、高圧空気（例えば3kg/cm<sup>2</sup>程度）で押圧して移送している。

【0017】上述した該平積み、径約2mmの折り返し付き切り込み孔を約50mmピッチにラムダムに配設した台紙を用いた。その結果、従来の台紙であれば、例えば最上部の板ガラスから3~6枚下の板ガラスまでにおいて、約50~200mm程度板ズレを生じていたものが、最上部板ガラスのみ程度が約0~5mm程度となり、板ズレの現象は防止でき解決できた。さらに台紙跡試験を環境試験機で加速試験を行ったところ、従来の台紙と同等の結果を得た。

#### 【0018】実施例2

実施例1と同様にして、台紙のみ、径約0.8mmの折り返し付き切り込み孔を約50mmピッチにラムダムに配設した台紙を用いた。

【0019】その結果、実施例1と同様の結果を得た。

【0020】

【発明の効果】以上前述したように、本発明によれば、ことに平積み状態に積載し、搬送、輸送あるいは保管等をする際に、板ガラスに台紙跡の紙肌模様やヤケ現象等を発現するようなこともなく、板ガラスのズレ現象を防止し、各工程でのトラブルをも解消でき、作業効率を向上するとともに、高安全性で安定した自動化となし得る、有用なガラス用台紙を提供するものである。